C-A OPERATIONS PROCEDURES MANUAL

15.6.1 Changing an AGS Rf Feedback Amplifier

Text Pages 2 through 4

Hand Processed Changes

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Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

N. Laloudakis, P. Ingrassia

15.6.1 Changing an AGS Rf Feedback Amplifier

Warning:
Use of this procedure must be approved by the Chief Electrical Engineer and the Maintenance Coordinator prior to each use under AGS minimum LOTO conditions

1. Purpose

1.1 This procedure instructs Rf group members how to change a feedback amplifier for a Power Amplifier in the AGS ring

1.2 This procedure is authorized for use under "minimum" LOTO conditions in the AGS.

2. Responsibilities

2.1 Rf group members are responsible for the execution of this procedure
2.2 The first line supervisor or the group leader is responsible for documenting and archiving any changes to the procedure for any given use.
2.3 The first line supervisor is responsible to:

2.3.1 Prepare a work plan (green sheet) whenever this procedure is used. The procedure will serve to facilitate the work planning process.
2.3.2 Have the work plan approved by the Chief Electrical Engineer, the First Line Supervisor, the Maintenance Coordinator, and a member of the ESSHQ Division (e.g. Division Head, ES&H Coordinator, Work Planning Coordinator, or the Environmental Protection Coordinator) or an authorized designee of any of the above.
2.3.3 File completed work plans
2.3.4 Include worker feedback on the work plan (green sheet) as well as any changes to the procedure due to unforeseen circumstances

3. Prerequisites

3.1 Personal Protective equipment for a 208V, 800 A system
3.1.1 NFPA Category 2 (8 Cal/cm^2):

- Cotton underwear
- fire-rated long-sleeve shirts and long pants,
- hardhat with arc rated face shield,
- safety glasses,
- all leather gloves:
- leather work shoes,
- hearing protection.

Note: Cotton underwear not required with 8 Cal/cm^2 Fire Rated long-sleeve shirts and long pants

3.2 All personnel working on any electrical system or equipment in the C-AD shall be familiar with BNL SBMS Electrical Safety, BNL SBMS Lockout/Tagout (LO/TO), C-A-OPM 1.5, "Electrical Safety Implementation Plan", C-A-OPM 1.5.3 "Procedure to Open or Close Breakers and Switches and Connecting/Disconnecting Plugs", C-A-OPM 2.36, "Lockout/Tagout for Control of Hazardous Energy". C-AD will provide on-site/work specific training to individuals in the electrical safety aspects of their job functions and assignments.

4. Precautions

4.1 Care must be taken to LOTO the appropriate energy disconnect switch for the power amplifier to be repaired.

4.2 In case of a problem during execution of this procedure notify:

- 4.2.1 the first line supervisor
- 4.2.2 the second line supervisor or Group Leader
- 4.2.3 the Maintenance Coordinator.

4.3 LOTO of adjacent AGS elements is not required to execute this procedure.

5. Procedures

Warning:
Use of this procedure must be approved by the Chief Electrical Engineer and the Maintenance Coordinator prior to each use under AGS minimum LOTO conditions.

Caution:
Assume adjacent AGS elements are energized.

Caution:
PPE required see paragraph 3.1 for steps 5.1 through 5.6 of this procedure

Warning:
Workers must remain three feet away from elements that are not LOTO

5.1 Lock and Tag the system

- 5.1.1 LOTO the Anode power supply and the Screen power supply for the Power Amplifier to be worked on –see paragraph 3.1.

5.2 Disconnect all the cables

5.3 Take out the feedback amplifier

5.4 Install the replacement feedback amplifier

5.5 Reconnect all the cables

5.6 Remove LOTO (step 5.1.1)

5.7 Test the feedback amplifier before leaving the AGS ring.

6. Documentation

6.1 Work Plan (Green Sheet) archived by first line supervisor.

7. References

7.1 SBMS Electrical Safety Subject Area – Personal Protective Equipment (PPE).

7.2 C-A-OPM 1.5, "Electrical Safety Implementation Plan".

7.3 C-A-OPM 1.5.3 "Procedure to Open or Close Breakers and Switches and Connecting/Disconnecting Plugs".

7.4 C-A-OPM 2.36, "Lockout/Tagout for Control of Hazardous Energy".

7.5 SBMS Electrical Safety.

7.6 SBMS Lockout/Tagout (LOTO).

8. Attachments

None